

CLAIMS

1. A substrate for ink jet comprising:
 - a base plate formed with a heat-generating resistor for generating energy for discharging ink;
 - 5 an electrode wiring electrically connected with said heat-generating resistor; and
 - an upper protective layer provided above said heat-generating resistor and said electrode wiring, and comprising a TaCr alloy, wherein said upper
 - 10 protective layer is formed with a construction made by resin on an upper portion thereof and said resin construction is fixed on said upper protective layer.
- 15 2. A substrate for ink jet according to claim 1, wherein said upper protective layer is constituted of a two-layered film formed by a lower layer of a TaCr alloy and an upper layer of Ta, and wherein said lower layer fixes a liquid flow path member as said
- 20 resin construction and said upper layer is provided at a position contact with ink at least above said heat-generating resistor.
- 25 3. A substrate for ink jet according to claim 1, wherein said upper protective layer contains Cr in an amount equal to or higher than 12 atomic % (at.%).

4. A substrate for ink jet according to claim 1,
wherein said upper protective layer has an amorphous
structure.

5 5. A substrate for ink jet according to claim 1,
wherein said upper protective layer has a thickness
within a range of 50 to 500 nm.

10 6. A substrate for ink jet according to claim 1,
wherein said upper protective layer has a thickness
within a range of 10 to 100 nm.

15 7. A substrate for ink jet according to claim 1,
wherein said upper protective layer has a film stress
which is at least a compression stress and is equal
to or less than 1.0×10^{10} dyn/cm².

20 8. An ink jet head comprising:
a discharge port for discharging a liquid;
a liquid flow path communicating with said
discharge port and having a portion for applying
thermal energy for discharging said liquid to said
liquid;
a heat-generating resistor for generating said
25 thermal energy;
an electrode wiring electrically connected with
said heat-generating resistor; and

an upper protective layer provided above said heat-generating resistor and said electrode wiring, and comprising a TaCr alloy, wherein said upper protective layer is formed with a construction made
5 by resin on an upper portion thereof and said resin construction is fixed on said upper protective layer.

9. An ink jet head according to claim 8,
10 wherein said upper protective layer is constituted of a two-layered film formed by a lower layer of a TaCr alloy and an upper layer of Ta, and wherein said lower layer fixes a liquid flow path member as said resin construction and said upper layer is provided
15 at a position contact with ink at least above said heat-generating resistor.

10. An ink jet head according to claim 8,
wherein said upper protective layer contains Cr in an
20 amount equal to or higher than 12 atomic % (at.%).

11. An ink jet head according to claim 8,
wherein said upper protective layer has an amorphous structure.

12. An ink jet head according to claim 8,
wherein said upper protective layer has a thickness

within a range of 50 to 500 nm.

13. An ink jet head according to claim 8,
wherein said upper protective layer has a thickness
5 within a range of 10 to 100 nm.

14. An ink jet head according to claim 8,
wherein said upper protective layer has a film stress
which is at least a compression stress and is equal
10 to or less than 1.0×10^{10} dyn/cm².

15. A producing method for an ink jet head
including, on a substrate, a heat-generating resistor
constituting a heat generating portion, an electrode
15 wiring electrically connected with said heat-
generating resistor, an upper protective layer
provided on said heat-generating resistor and said
electrode wiring and having a contact surface with an
ink, and a liquid flow path member formed by a resin
20 layer on said substrate, comprising:

a step of forming an upper protective layer in
which a Ta layer is laminated on a layer formed by a
TaCr alloy;

25 a step of selectively patterning said Ta layer
and selectively removing said Ta layer;

a step of forming the liquid flow path member
in a portion where the layer formed by said TaCr

alloy is exposed by said removing.